AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of the claims in this application:

Listing of Claims:

1. (Previously Presented) An apparatus comprising:

an interface configured to receive a media sample;

a processor configured to extract a first set of lower level but not higher level features from a digital version of the media sample;

a transmitter configured to transmit the extracted first set of lower level but not higher level features over a wireless communication link,

a receiver configured to receive over the wireless communication link a request message that requests at least one additional feature;

wherein the processor is further configured to respond to the request message to extract a second set of lower level but not higher level features from the digital version of the media sample and to transmit the extracted second set of lower level but not higher level features over the wireless communication link to a remote service for any necessary higher level feature extraction for matching in conjunction with the first and second sets of lower level features, wherein the receiver is configured to receive notification as to identification of a media corresponding to the media sample from the remote service.

2. (Previously Presented) The apparatus of claim 1 wherein the interface comprises a transducer.

3. (Previously Presented) The apparatus of claim 2 wherein the transducer comprises a microphone and the media sample comprises an audio sample.

4. (Previously Presented) The apparatus of claim 2 wherein the transducer comprises a camera and the media sample comprises a visual sample.

5. (Previously Presented) The apparatus of claim 1 wherein the interface comprises one of a cable and a wireless link.

6. (Previously Presented) The apparatus of claim 5 wherein the media sample that the interface receives is the digital version.

7. (Previously Presented) The apparatus of claim 1 wherein said transmitter is further configured to transmit a message that includes the at least one extracted lower level but not higher level feature and no portion of the digital version of the media sample.

8. (Previously Presented) The apparatus of claim 1 wherein the processor is further configured to adaptively select a number of lower level but not higher level features to extract based on the digital version of the media sample.

9. (Previously Presented) The apparatus of claim 1 wherein the processor is further configured to adaptively select at least one type of feature to extract based on the digital version of the media sample, the processor extracts at least one feature of the adaptively selected type, and wherein the transmitter is further configured to transmit an identifier of the selected type of feature.

10-11. (Canceled)

12. (Previously Presented) The apparatus of claim 1 further comprising a user interface configured to cause the transmitter to transmit the first set of lower level but not higher level features, and a buffer configured to store at least a portion of the digital version of the media sample, wherein the processor extracts at least some of the first set prior to a user input at the said user interface.

13-15. (Canceled)

16. (Previously Presented) The apparatus of claim 1 further comprising a user interface by which a single user input initiates: the processor to extract the first set of lower level but not higher level features, a wireless communications link to be established between the MS and a communication service, and the extracted first set of lower level but not higher level features to be transmitted over the wireless communications link.

17. (Previously Presented) The apparatus of claim 16 wherein the single user input further initiates a buffer disposed between the transducer and the processor to begin storing at least a portion of the digital version of the media sample.

18. (Previously Presented) The apparatus of claim 1 wherein the first and second sets of features comprise MPEG-7 descriptors.

19. (Previously Presented) The apparatus of claim 1 wherein the first set of lower level but not higher level features is non-reconstructive of the digital version of the media sample.

20. (Previously Presented) The apparatus of claim 1 wherein the first and second sets of features, in combination, are non-reconstructive of the digital version of the media sample.

21. (Canceled)

22. (Previously Presented) The apparatus of claim 1, wherein the request message specifically identifies each additional feature at least by type, and the second set of features comprises only features of the said identified type.

23. (Previously Presented) A computer readable storage medium embodied with a computer program comprising:

a first set of computer instructions to extract in response to a user input on a device a first set of lower level but not higher level features from a digital media sample, and to extract in response to a received request message to the device from a remote service, through wireless communications, a second set of lower level but not higher level features consistent with at least one additional feature requested in the request message;

a second set of computer instructions to transmit in separate messages the first and second sets of extracted lower level but not higher level features over a wireless communications link to a remote service for any necessary higher level feature extraction for matching in conjunction with the first and second sets of lower level features; and

a third set of computer instructions for receiving a notification of identification of a media corresponding to the media sample from the remote service.

24. (Previously Presented) The computer readable storage medium of claim 23 wherein said separate messages comprise features but no portion of the digital media sample.

25. (Previously Presented) The computer readable storage medium of claim 23 wherein the request message specifies a number of additional features, and the first set of computer instructions is to adaptively select the second set of features comprising the specified number.

26. (Previously Presented) The computer readable storage medium of claim 23 wherein

the first set of computer instructions is to adaptively select a type of feature to extract based on the request message and to extract the first set of features of the adaptively selected type.

27. (Previously Presented) The computer readable storage medium of claim 23 wherein

the first set of computer instructions is to extract the first set of features from a first time-bounded segment of the digital media sample, and

the second set of computer instructions is to transmit a second time-bounded segment and not the first time-bounded segment with the first set of features.

28-29. (Canceled)

30. (Previously Presented) The computer readable storage medium of claim 23 wherein the at least one feature defines a timepoint, the first set of computer instructions is to extract at least one timepoint from the digital media sample, and one of said messages comprises a timepoint, a spectral slice of the digital media sample and an identifier that links the spectral slice to the timepoint.

31-34. (Canceled)

35. (Previously Presented) The computer readable storage medium of claim 23 wherein the first set of features is non-reconstructive of that digital media sample.

36. (Canceled)

37. (Previously Presented) A computer readable storage medium embodied with a computer program comprising:

a first set of computer instructions to receive over a network to a remote service from a device through wireless communications a first message that includes a first set of received lower level but not higher level features;

a second set of computer instructions to search a database of feature sets for all matching sets that match the first set of received features and to determine at least one additional feature that distinguishes among each of the matching sets;

a third set of computer instructions to transmit over the network a request message that stipulates the at least one additional feature, the first set of computer instructions further to receive over the network a second message that includes a second set of received lower level but not higher level features in response to the request message that stipulates the at least one additional feature; and

a fourth set of computer instructions to uniquely identify one feature set from among the matching sets using the second set of received features through any needed extraction of higher level features wherein an iterative loop is performed in which a Kth higher level feature is extracted using the first and second sets of received lower level features, a matching feature set is searched using the Kth higher level feature, and the addresses of the feature sets that match the Kth higher level feature are stored as the matching feature set until a unique match is determined, where K is natural number from 1 to a maximum number of higher level features.

38. (Previously Presented) The computer readable storage medium of claim 37 wherein each feature set is associated with a media file title, the computer program further comprising a fifth set of computer instructions to transmit, over the network to a sender of the message, a reply message that includes the media file title.

39. (Canceled)

40. (Previously Presented) The computer readable storage medium of claim 38 wherein the fourth set of computer instructions further is to determine a link address for a media file uniquely associated with the uniquely identified feature set, and wherein the fifth set of computer instructions is further to transmit the link address in the reply message.

41-46. (Canceled)

47. (Previously Presented) The computer readable storage medium of claim 37 wherein the request message includes at least one of a number of additional features and a type of the at least one additional feature.

48. (Previously Presented) An apparatus comprising:

means for receiving a media sample;

processing means for extracting at least one feature from a digital version of the media sample, said processing means responsive to a user input to extract a first set of lower level but not higher level features and responsive to a request message identifying at least one additional feature to extract a second set of lower level but not higher level features consistent with the identified at least one additional feature;

means for transmitting the first and second sets of lower level but not higher level features in separate messages over a wireless communication link to a remote service for any necessary higher level feature extraction for matching in conjunction with the first and second sets of lower level features; and

means for receiving the request message through wireless communications and for receiving notification of an identification of a media corresponding to the media sample from the remote service.

49.(Previously Presented) The apparatus of claim 48, wherein the means for receiving a media sample comprises a transducer, and the means for extracting comprises a digital processor.

50. (Previously Presented) A method comprising:

at a portable wireless device, receiving a media sample;

at the portable wireless device, extracting a first plurality of lower level but not higher level features from a digital version of the media sample;

transmitting from the portable wireless to a remote service device a message that includes the extracted first plurality of lower level but not higher level features;

receiving at the portable wireless device a request message requesting at least one additional lower level but not higher level feature;

at the portable wireless device, extracting at least one extra lower level but not higher level feature consistent with the request message;

transmitting from the portable wireless device a message that includes the extracted extra lower level but not higher level feature to the remote service for any necessary higher level feature extraction for matching in conjunction with the first and second sets of lower level features; and

receiving a notification of identification from the remote service.

51. (Previously Presented) The apparatus as in claim 1, further comprising a button configured, when pressed, to initiate identification of media from the media sample.

52. (Previously Presented) The computer readable medium of claim 23, further comprising initiating identification of media from the media sample through activating a button for identification of media.

53. (Previously Presented) The apparatus of claim 48, further comprising a button configured, when pressed, to initiate identification of media from the media sample.

54. (Previously Presented) The method of claim 50, further comprising initiating identification of media from the media sample through activating a button for identification of media.

55. (Previously Presented) The method of claim 54, further comprising providing a link, after the remote service identifies the media, that, when activated, accesses a music service for downloading the media.

56. (Previously Presented) An apparatus comprising:

a receiver configured to receive over a network from a device a first message that includes a first set of lower level but not higher level features extracted from a media sample;

a transmitter configured to request over the network from the device at least one additional feature in a request message, wherein the receiver is configured to receive over the network from the device a second message responsive to the request message, the second message including a second set of lower level but not higher level features

extracted from the media sample; and

a processor configured to use the received lower level but not higher level features to identify a media corresponding to the media sample and, if needed, configured to extract higher level features from the received lower level but not higher level features to identify the media corresponding to the media sample, wherein an iterative loop is performed in which a Kth higher level feature is extracted using the first and second sets of received lower level features, a matching feature set is searched using the Kth higher level feature, and the addresses of the feature sets that match the Kth higher level feature are stored in the matching feature set until a unique match is determined, where K is natural number from 1 to a maximum number of higher level features, wherein the transmitter is configured to transmit a notification of identification of the media sample to the device.

57. (Previously Presented) A method comprising:

receiving at a remote service from a device through a network a first message that includes a first set of received extracted lower level but not higher level features from a media sample;

searching a database of feature sets for all matching sets that match the first set of received extracted lower level but not higher level features and determining at least one additional feature that distinguishes among each of the matching sets;

transmitting over the network a request message that stipulates the at least one additional feature;

receiving over the network a second message that includes a second set of received extracted lower level but not higher level features in response to the request message that stipulates the at least one additional feature; and

uniquely identifying one feature set from among matching sets using the received lower level features through any needed extraction of higher level features from the received extracted lower level but not higher level features if a unique match is not found from the received extracted lower level but not higher level features, wherein an iterative loop is performed in which a Kth higher level feature is extracted using the first and second sets of received lower level features, a matching feature set is searched using the Kth higher level feature, and the addresses of the feature sets that match the Kth higher level feature are stored until the unique match is determined, where K is natural number from 1 to a maximum number of higher level features.

58. (Previously Presented) The apparatus of claim 56, wherein the first and second messages comprise the at least one extracted lower level but not higher level feature and no portion of the digital version of the media sample.

59. (Previously Presented) The apparatus of claim 56, wherein the network comprises a wireless communications link established between the apparatus and the device, and the extracted first set of lower level but not higher level features are received over the wireless communications link.

60. (Previously Presented) The apparatus of claim 56, wherein the first and second sets of lower level but not higher level features comprise MPEG-7 descriptors.

61. (Previously Presented) The apparatus of claim 56, wherein the first set of lower level but not higher level features is non-reconstructive of a digital version of the media sample.

62. (Previously Presented) The apparatus of claim 56, wherein the first and second sets of lower level but not higher level features, in combination, are non-reconstructive of the digital version of the media sample.

63. (Previously Presented) The apparatus of claim 56, wherein the request message specifically identifies each additional feature at least by type, and the second set of lower level but not higher level features comprises only features of the said identified type.

64. (Previously Presented) The method of claim 57, wherein the first and second messages comprise the at least one extracted lower level but not higher level feature and no portion of the digital version of the media sample.

65. (Previously Presented) The method of claim 57, wherein the network comprises a wireless communications link established between the apparatus and the device, and the extracted first set of lower level but not higher level features are received over the wireless communications link.

66. (Previously Presented) The method of claim 57, wherein the first and second sets of lower level but not higher level features comprise MPEG-7 descriptors.

67. (Previously Presented) The method of claim 57, wherein the first set of lower level but not higher level features is non-reconstructive of a digital version of the media sample.

68. (Previously Presented) The method of claim 57, wherein the first and second sets of lower level but not higher level features, in combination, are non-reconstructive of the digital version of the media sample, wherein the lower level but not higher level features comprise signal envelope and centroid, wherein the higher level features comprise a timbral temporal distance between timbral temporal centroids.

69. (Previously Presented) The method of claim 57, wherein the request message specifically identifies each additional feature at least by type, and the second set of lower level but not higher level features comprise only features of the said identified type.

70. (Previously Presented) A system comprising:
a mobile station; and
a remote service, wherein
the mobile station comprises

an interface configured to receive a media sample;

a first processor configured to extract a first set of lower level but not higher level features from a digital version of the media sample;

a first transmitter configured to transmit the extracted first set of lower level but not higher level features over a wireless communication link to the remote service,

a first receiver configured to receive over the wireless communication link a request message that requests at least one additional feature;

wherein the first processor is further configured to respond to the request message to extract a second set of lower level but not higher level features from the digital version of the media sample and to transmit the extracted second set of lower level but not higher level features over the wireless communication link to the remote service for any necessary higher level feature extraction for matching, wherein the first receiver is configured to receive notification as to identification of a media corresponding to the media sample from the remote service, wherein

the remote service comprises

a second receiver configured to receive over a network from the mobile station a first message that includes a first set of lower level but not higher level features extracted from the media sample;

a second transmitter configured to request over the network from the mobile station at least one additional feature in a request message, wherein the second receiver is configured to receive over the network from the mobile station a second message responsive to the request message, the second message including a second set of lower level but not higher level features extracted from the media sample; and

a second processor configured to use the received lower level but not higher level features to identify a media corresponding to the media sample and, if needed, configured to extract higher level features from the received lower level but not higher level features to identify the media corresponding to the media sample, wherein an iterative loop is performed in which a Kth higher level feature is extracted using the first and second sets of received lower level features, a matching feature set is searched using the Kth higher level feature, and the addresses of the feature sets that match the Kth higher level feature are stored in the matching feature set until a unique match is determined, where K is natural number from 1 to a maximum number of higher level features, wherein the second transmitter is configured to transmit a notification of identification of the media sample to the mobile station.